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THE  
**Musical Scales of the Hindus:**

WITH  
REMARKS ON THE APPLICABILITY

OF  
HARMONY TO HINDU MUSIC,

BY  
RAJAH COMM. SOURINDRO MOHUN TAGORE,  
MUS. DOC., SANGĪTA-NĀYAKA,

Companion of the Order of the Indian Empire;

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---

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PATHURIAGHATA RAJBATI.

1884.

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TO

*His Excellency the Most Hon'ble*

THE MARQUIS OF RIPON,

K.G., P.C., G.M.S.I., G.M.I.E., &c., &c., &c.,

Viceroy and Governor-General of India,

THIS BOOK IS,

WITH PERMISSION,

MOST RESPECTFULLY DEDICATED

BY

HIS EXCELLENCY'S MOST OBLIGED AND HUMBLE  
SERVANT,

S. M. TAGORE.



## PREFACE.

---

**A**T the request of several European friends who take a lively interest in the Music of this country and would like to see it improved by the use of *Harmony*, I have ventured to publish the following pages with the object of acquainting them with the characteristic features of Hindu Music and of showing to what extent its spirit would admit of the application of *Harmony* thereto. How far have I been successful in giving a clear expression to my views regarding the question, I do not feel competent to say. But if a perusal of these pages enables any Musician to arrive at a definite conclusion on the subject, I shall deem myself amply rewarded.

CALCUTTA,  
Pathuriaghata Rajbati,  
31st July 1884.

} S. M. TAGORE.





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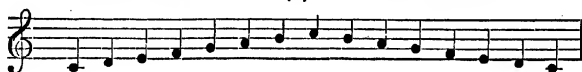
THE  
**Musical Scales of the Hindus.**

**SAMPÚRNA THÁT.\***

ASCENDING.

(1)

DESCENDING.



**With D Flat.**

ASCENDING.

(2)

DESCENDING.

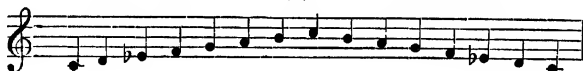


**With E Flat.**

ASCENDING.

(3)

DESCENDING.

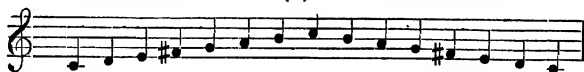


**With F Sharp.**

ASCENDING.

(4)

DESCENDING.



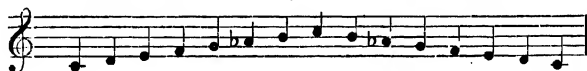
\* Scales consisting of Seven Notes.

**With A Flat.**

ASCENDING.

(5)

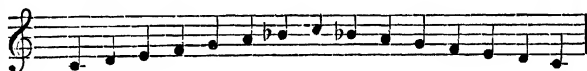
DESCENDING.

**With B Flat.**

ASCENDING.

(6)

DESCENDING.

**With D and E Flat.**

ASCENDING.

(7)

DESCENDING.

**With D Flat and F Sharp.**

ASCENDING.

(8)

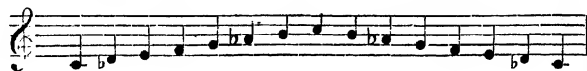
DESCENDING.

**With D and A Flat.**

ASCENDING.

(9)

DESCENDING.



**With D and B Flat.**

ASCENDING. (10) DESCENDING.

**With E Flat and F Sharp.**

ASCENDING. (11) DESCENDING.

**With E and A Flat.**

ASCENDING. (12) DESCENDING.

**With E and B Flat.**

ASCENDING. (13) DESCENDING.

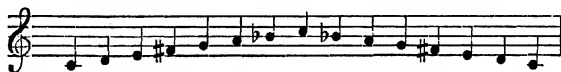
**With F Sharp and A Flat.**

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**With F Sharp and B Flat.**

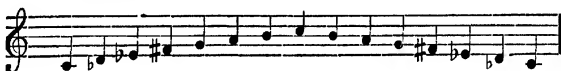
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**With A and B Flat.**

ASCENDING. (16) DESCENDING.

**With D and E Flat and F Sharp.**

ASCENDING. (17) DESCENDING.

**With D, E, and A Flat.**

ASCENDING. (18) DESCENDING.

**With D, E, and B Flat.**

ASCENDING. (19) DESCENDING.



**With D Flat, F Sharp and A Flat.**

ASCENDING.

(20)

DESCENDING.

**With D Flat, F Sharp and B Flat.**

ASCENDING.

(21)

DESCENDING.

**With D, A, and B Flat.**

ASCENDING.

(22)

DESCENDING.

**With E Flat, F Sharp and A Flat.**

ASCENDING.

(23)

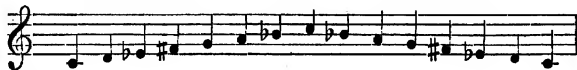
DESCENDING.

**With E Flat, F Sharp and B Flat.**

ASCENDING.

(24)

DESCENDING.





**With E, A, and B Flat.**

ASCENDING. (25) DESCENDING.

**With F Sharp, A and B Flat.**

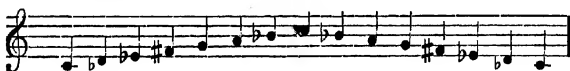
ASCENDING. (26) DESCENDING.

**With D and E Flat, F Sharp and A Flat.**

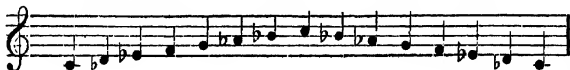
ASCENDING. (27) DESCENDING.

**With D and E Flat, F Sharp and B Flat.**

ASCENDING. (28) DESCENDING.

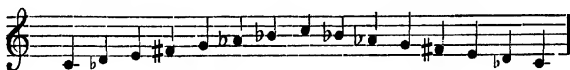
**With D, E, A, and B Flat.**

ASCENDING. (29) DESCENDING.



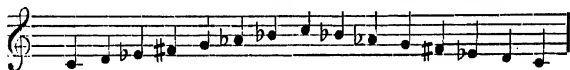
**With D Flat, F Sharp, A and B Flat.**

ASCENDING. (30) DESCENDING.



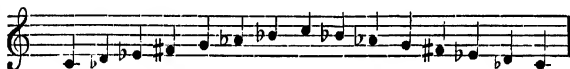
**With E Flat, F Sharp, A and B Flat.**

ASCENDING. (31) DESCENDING.



**With D and E Flat, F Sharp, A and B Flat.**

ASCENDING. (32) DESCENDING.



**SHĀRAVA THĀT.\***

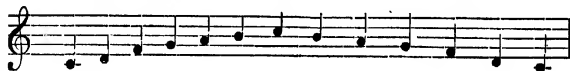
**With D omitted.**

ASCENDING. (1) DESCENDING.



**With E omitted.**

ASCENDING. (2) DESCENDING.



\* Scales consisting of Six Notes.

**With F omitted.**

ASCENDING.

(3)

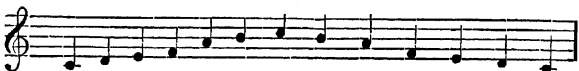
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**With G omitted.**

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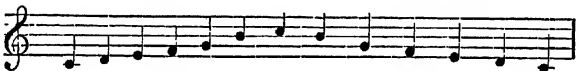
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**With A omitted.**

ASCENDING.

(5)

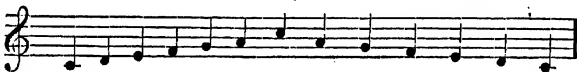
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**With B omitted.**

ASCENDING.

(6)

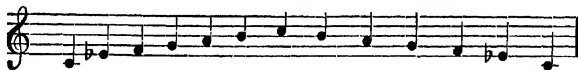
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**With D omitted and with E Flat.**

ASCENDING.

(7)

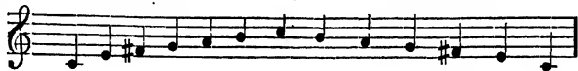
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**With D omitted and with F Sharp.**

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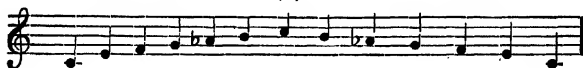
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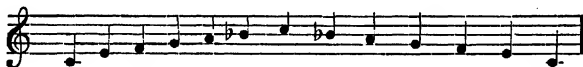


**With D omitted and with A Flat.**

ASCENDING. (9) DESCENDING.

**With D omitted and with B Flat.**

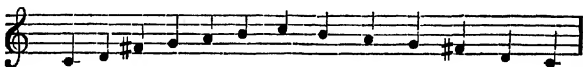
ASCENDING. (10) DESCENDING.

**With E omitted and with D Flat.**

ASCENDING. (11) DESCENDING.

**With E omitted and with F Sharp.**

ASCENDING. (12) DESCENDING.

**With E omitted and with A Flat.**

ASCENDING. (13) DESCENDING.

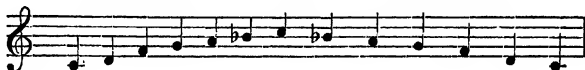


**With E omitted and with B Flat.**

ASCENDING.

(14)

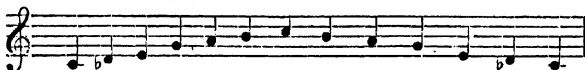
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**With F omitted and with D Flat.**

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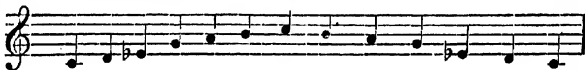
DESCENDING.

**With F omitted and with E Flat.**

ASCENDING.

(16)

DESCENDING.

**With F omitted and with A Flat.**

ASCENDING.

(17)

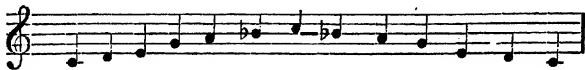
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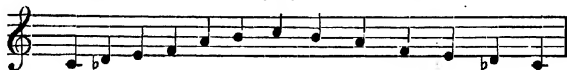
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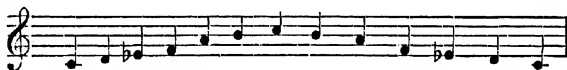


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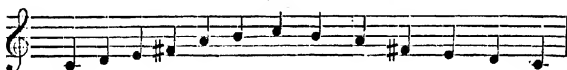
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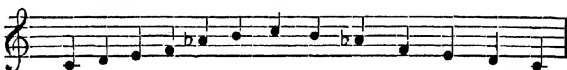
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**With G omitted and with F Sharp.**

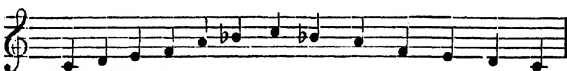
ASCENDING. (21) DESCENDING.

**With G omitted and with A Flat.**

ASCENDING. (22) DESCENDING.

**With G omitted and with B Flat.**

ASCENDING. (23) DESCENDING.



**With A omitted and with D Flat.**

ASCENDING. (24) DESCENDING.

**With A omitted and with E Flat.**

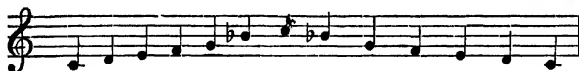
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**With A omitted and with F Sharp.**

ASCENDING. (26) DESCENDING.

**With A omitted and with B Flat.**

ASCENDING. (27) DESCENDING.

**With B omitted and with D Flat.**

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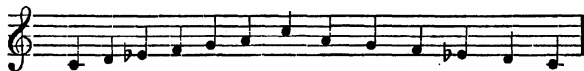


**With B omitted and with E Flat.**

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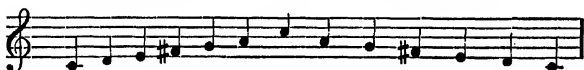
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**With B omitted and with F Sharp.**

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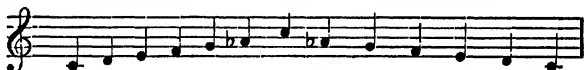
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**With B omitted and with A Flat.**

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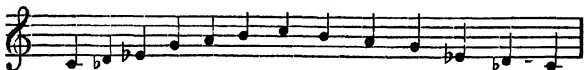
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**With F omitted and with D and E Flat.**

ASCENDING.

(32)

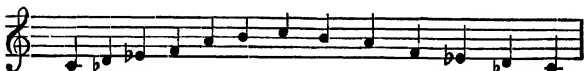
DESCENDING.

**With G omitted and with D and E Flat.**

ASCENDING.

(33)

DESCENDING.



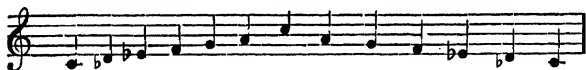


**With A omitted and with D and E Flat.**

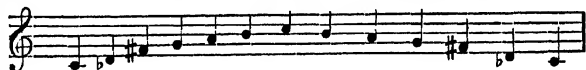
ASCENDING. (34) DESCENDING.

**With B omitted and with D and E Flat.**

ASCENDING. (35) DESCENDING.

**With E omitted and with D Flat and F Sharp.**

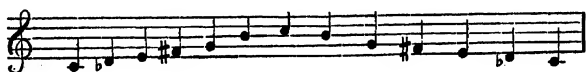
ASCENDING. (36) DESCENDING.

**With G omitted and with D Flat and F Sharp.**

ASCENDING. (37) DESCENDING.

**With A omitted and with D Flat and F Sharp.**

ASCENDING. (38) DESCENDING.

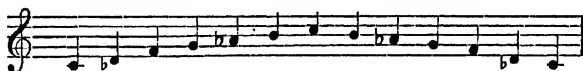


**With B omitted and with D Flat and F Sharp.**

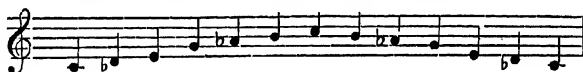
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**With E omitted and with D and A Flat.**

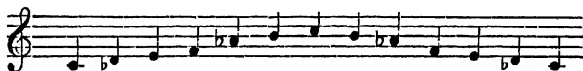
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**With F omitted and with D and A Flat.**

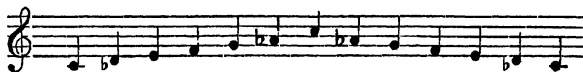
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**With G omitted and with D and A Flat.**

ASCENDING. (42) DESCENDING.

**With B omitted and with D and A Flat.**

ASCENDING. (43) DESCENDING.

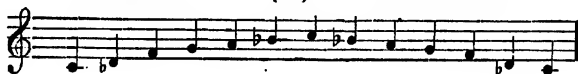


**With E omitted and with D and B Flat.**

ASCENDING.

(44)

DESCENDING.

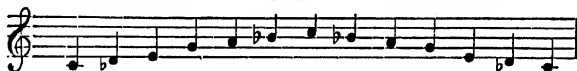


**With F omitted and with D and B Flat.**

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(45)

DESCENDING.

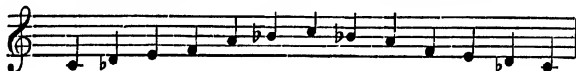


**With G omitted and with D and B Flat.**

ASCENDING.

(46)

DESCENDING.



**With A omitted and with D and B Flat.**

ASCENDING.

(47)

DESCENDING.

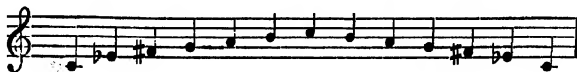


**With D omitted and with E Flat and F Sharp.**

ASCENDING.

(48)

DESCENDING.

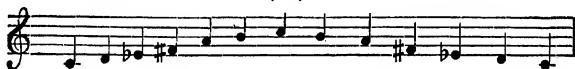


**With G omitted and with E Flat and F Sharp.**

ASCENDING.

(49)

DESCENDING.

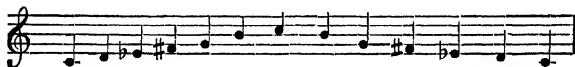


**With A omitted and with E Flat and F Sharp.**

ASCENDING.

(50)

DESCENDING.

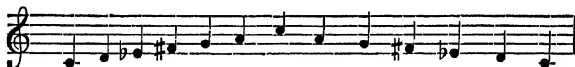


**With B omitted and with E Flat and F Sharp.**

ASCENDING.

(51)

DESCENDING.

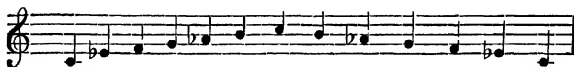


**With D omitted and with E and A Flat.**

ASCENDING.

(52)

DESCENDING.

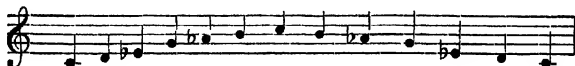


**With F omitted and with E and A Flat.**

ASCENDING.

(53)

DESCENDING.



**With G omitted and with E and A Flat.**

ASCENDING.

(54)

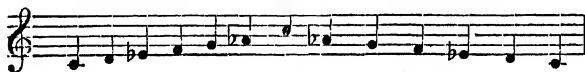
DESCENDING.

**With B omitted and with E and A Flat.**

ASCENDING.

(55)

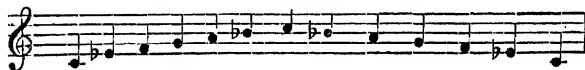
DESCENDING.

**With D omitted and with E and B Flat.**

ASCENDING.

(56)

DESCENDING.

**With F omitted and with E and B Flat.**

ASCENDING.

(57)

DESCENDING.

**With G omitted and with E and B Flat.**

ASCENDING.

(58)

DESCENDING.



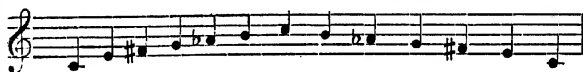
**With A omitted and with E and B Flat.**

ASCENDING. (59) DESCENDING.



**With D omitted and with F Sharp and A Flat.**

ASCENDING. (60) DESCENDING.



**With E omitted and with F Sharp and A Flat.**

ASCENDING. (61) DESCENDING.



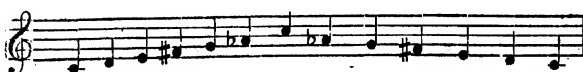
**With G omitted and with F Sharp and A Flat.**

ASCENDING. (62) DESCENDING.



**With B omitted and with F Sharp and A Flat.**

ASCENDING. (63) DESCENDING.

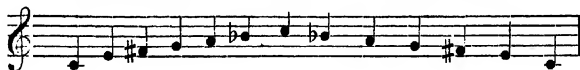


**With D omitted and with F Sharp and B Flat.**

ASCENDING.

(64)

DESCENDING.

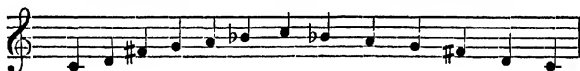


**With E omitted and with F Sharp and B Flat.**

ASCENDING.

(65)

DESCENDING.

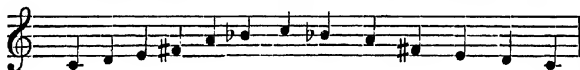


**With G omitted and with F Sharp and B Flat.**

ASCENDING.

(66)

DESCENDING.



**With A omitted and with F Sharp and B Flat.**

ASCENDING.

(67)

DESCENDING.

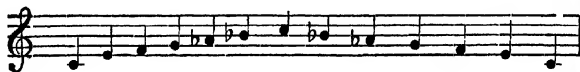


**With D omitted and with A and B Flat.**

ASCENDING.

(68)

DESCENDING.

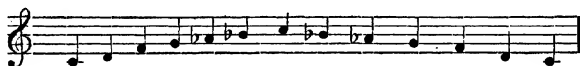


**With E omitted and with A and B Flat.**

ASCENDING.

(69)

DESCENDING.

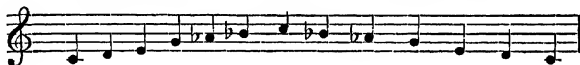


**With F omitted and with A and B Flat.**

ASCENDING.

(70)

DESCENDING.

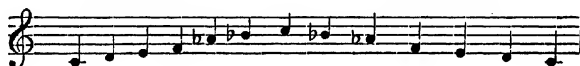


**With G omitted and with A and B Flat.**

ASCENDING.

(71)

DESCENDING.

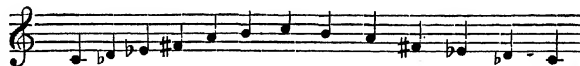


**With G omitted and with D, E Flat and F Sharp.**

ASCENDING.

(72)

DESCENDING.



**With A omitted and with D, E Flat and F Sharp.**

ASCENDING.

(73)

DESCENDING.



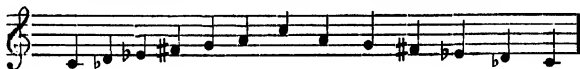


**With B omitted and with D, E Flat and F Sharp.**

ASCENDING.

(74)

DESCENDING.

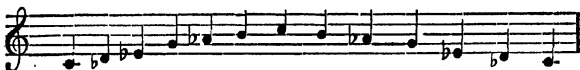


**With F omitted and with D, E and A Flat.**

ASCENDING.

(75)

DESCENDING.



**With G omitted and with D, E and A Flat.**

ASCENDING.

(76)

DESCENDING.



**With B omitted and with D, E and A Flat.**

ASCENDING.

(77)

DESCENDING.



**With F omitted and with D, E and B Flat.**

ASCENDING.

(78)

DESCENDING.

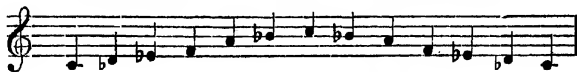


**With G omitted and with D, E and B Flat.**

**ASCENDING.**

(79)

**DESCENDING.**

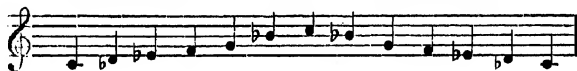


**With A omitted and with D, E and B Flat.**

**ASCENDING.**

(80)

DESCENDING.

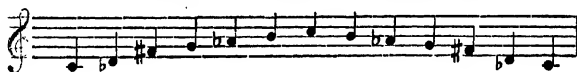


**With E omitted and with D Flat, F Sharp and A Flat.**

**ASCENDING.**

(81)

**DESCENDING.**

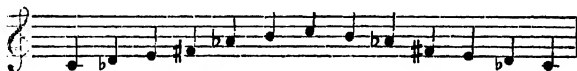


**With G omitted and with D Flat, F Sharp and A Flat.**

**ASCENDING.**

(82)

**DESCENDING.**

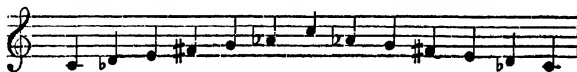


**With B omitted and with D Flat, F Sharp and A Flat.**

**ASCENDING.**

(83)

DESCENDING.

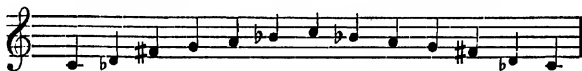


**With E omitted and with D Flat, F Sharp and B Flat.**

ASCENDING.

(84)

DESCENDING.



**With G omitted and with D Flat, F Sharp and B Flat.**

ASCENDING.

(85)

DESCENDING.

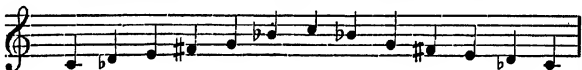


**With A omitted and with D Flat, F Sharp and B Flat.**

ASCENDING.

(86)

DESCENDING.



**With E omitted and with D, A and B Flat.**

ASCENDING.

(87)

DESCENDING.

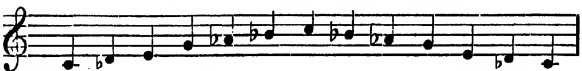


**With F omitted and with D, A and B Flat.**

ASCENDING.

(88)

DESCENDING.

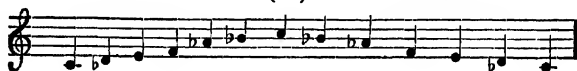


**With G omitted and with D, A and B Flat.**

**ASCENDING.**

(89)

**DESCENDING.**

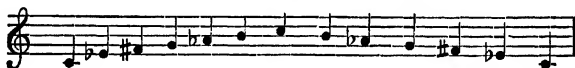


**With D omitted and with E Flat, F Sharp and A Flat.**

**ASCENDING.**

(90)

DESCENDING.

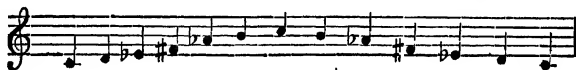


**With G omitted and with E Flat, F Sharp and A Flat.**

**ASCENDING.**

(91)

DESCENDING.

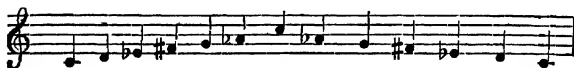


**With B omitted and with E Flat, F Sharp and A Flat.**

**ASCENDING.**

(92)

**DESCENDING.**



**With D omitted and with E Flat, F Sharp and B Flat.**

ASCENDING.

(93)

**DESCENDING.**

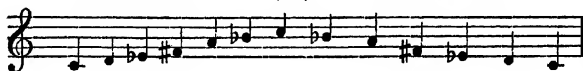


**With G omitted and with E Flat, F Sharp and B Flat.**

ASCENDING.

(94)

DESCENDING.

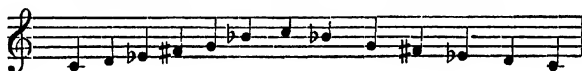


**With A omitted and with E Flat, F Sharp and B Flat.**

ASCENDING.

(95)

DESCENDING.



**With D omitted and with E, A and B Flat.**

ASCENDING.

(96)

DESCENDING.

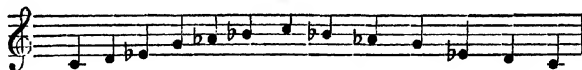


**With F omitted and with E, A and B Flat.**

ASCENDING.

(97)

DESCENDING.



**With G omitted and with E, A and B Flat.**

ASCENDING.

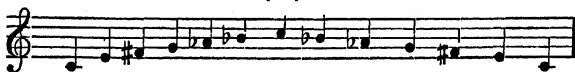
(98)

DESCENDING.



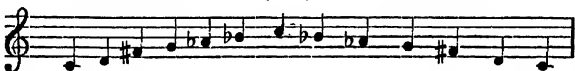
**With D omitted and with F Sharp, A and B Flat.**

ASCENDING. (99) DESCENDING.



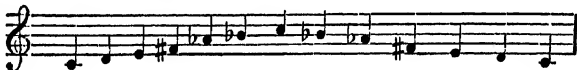
**With E omitted and with F Sharp, A and B Flat.**

ASCENDING. (100) DESCENDING.



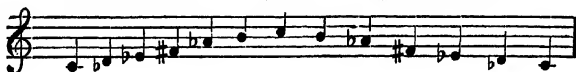
**With G omitted and with F Sharp, A and B Flat.**

ASCENDING. (101) DESCENDING.



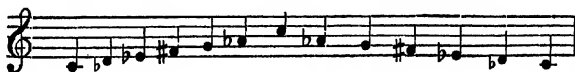
**With G omitted and with D, E Flat, F Sharp and A Flat.**

ASCENDING. (102) DESCENDING.



**With B omitted and with D, E Flat, F Sharp and A Flat.**

ASCENDING. (103) DESCENDING.



**With G omitted and with D, E Flat, F Sharp and B Flat.**

ASCENDING.

(104)

DESCENDING.

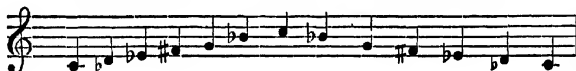


**With A omitted and with D, E Flat, F Sharp and B Flat.**

ASCENDING.

(105)

DESCENDING.



**With F omitted and with D, E, A and B Flat.**

ASCENDING.

(106)

DESCENDING.

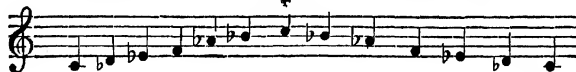


**With G omitted and with D, E, A and B Flat.**

ASCENDING.

(107)

DESCENDING.

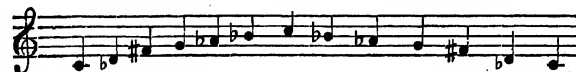


**With E omitted and with D Flat, F Sharp, A and B Flat.**

ASCENDING.

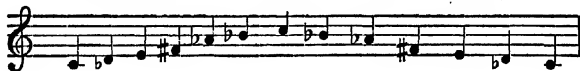
(108)

DESCENDING.



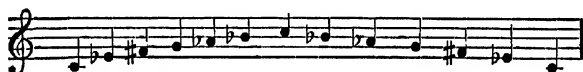
**With G omitted and with D Flat, F Sharp,  
A and B Flat.**

ASCENDING. (109) DESCENDING.



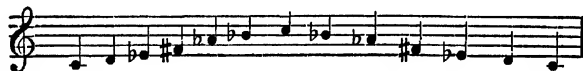
**With D omitted and with E Flat, F Sharp,  
A and B Flat.**

ASCENDING. (110) DESCENDING.



**With G omitted and with E Flat, F Sharp,  
A and B Flat.**

ASCENDING. (111) DESCENDING.



**With G omitted and with D, E Flat, F Sharp,  
A and B Flat.**

ASCENDING. (112) DESCENDING.





**With D and E omitted.**

The first staff of music is written on a five-line treble clef. It contains a sequence of eight eighth notes, starting on the second line (D4) and ascending stepwise to the eighth line (B4). The notes are: D4, E4, F4, G4, A4, B4, A4, G4. The final note is followed by a double bar line.

The first staff of music is written on a five-line treble clef. It begins with a common time signature 'C'. The melody consists of a sequence of eighth notes: C4 (below the staff), D4 (first line), E4 (first space), F4 (second line), G4 (second space), A4 (third line), B4 (third space), A4 (third line), G4 (second space), F4 (second line), E4 (first space), D4 (first line), and C4 (below the staff). The staff ends with a double bar line.

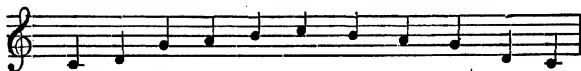
\* Scales consisting of five Notes.

**With E and F omitted.**

ASCENDING.

(6)

DESCENDING.

**With E and G omitted.**

ASCENDING.

(7)

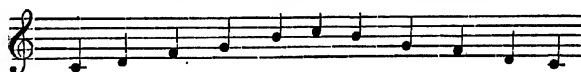
DESCENDING.

**With E and A omitted.**

ASCENDING.

(8)

DESCENDING.

**With E and B omitted.**

ASCENDING.

(9)

DESCENDING.

**With F and G omitted.**

ASCENDING.

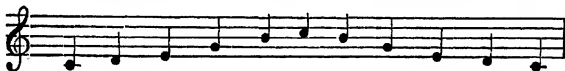
(10)

DESCENDING.



**With F and A omitted.**

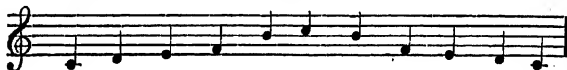
ASCENDING. (11) DESCENDING.

**With F and B omitted.**

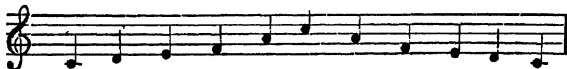
ASCENDING. (12) DESCENDING.

**With G and A omitted.**

ASCENDING. (13) DESCENDING.

**With G and B omitted.**

ASCENDING. (14) DESCENDING.

**With A and B omitted.**

ASCENDING. (15) DESCENDING.

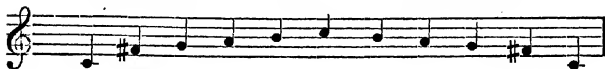


**With D and E omitted and with F Sharp.**

ASCENDING.

(16)

DESCENDING.



**With D and E omitted and with A Flat.**

ASCENDING.

(17)

DESCENDING.

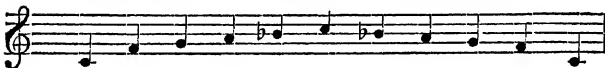


**With D and E omitted and with B Flat.**

ASCENDING.

(18)

DESCENDING.



**With D and F omitted and with E Flat.**

ASCENDING.

(19)

DESCENDING.



**With D and F omitted and with A Flat.**

ASCENDING.

(20)

DESCENDING.



**With D and F omitted and with B Flat.**

ASCENDING. (21) DESCENDING.



**With D and G omitted and with E Flat.**

ASCENDING. (22) DESCENDING.



**With D and G omitted and with F Sharp.**

ASCENDING. (23) DESCENDING.



**With D and G omitted and with A Flat.**

ASCENDING. (24) DESCENDING.



**With D and G omitted and with B Flat.**

ASCENDING. (25) DESCENDING.



**With D and A omitted and with E Flat.**

ASCENDING. (26) DESCENDING.



**With D and A omitted and with F Sharp.**

ASCENDING. (27) DESCENDING.



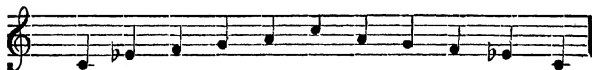
**With D and A omitted and with B Flat.**

ASCENDING. (28) DESCENDING.



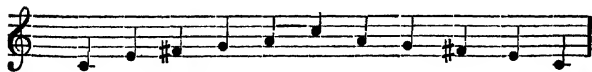
**With D and B omitted and with E Flat.**

ASCENDING. (29) DESCENDING.



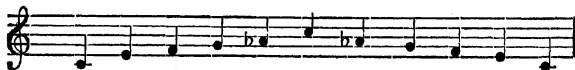
**With D and B omitted and with F Sharp.**

ASCENDING. (30) DESCENDING.



**With D and B omitted and with A Flat.**

ASCENDING. (31) DESCENDING.



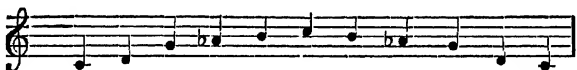
**With E and F omitted and with D Flat.**

ASCENDING. (32) DESCENDING.



**With E and F omitted and with A Flat.**

ASCENDING. (33) DESCENDING.



**With E and F omitted and with B Flat.**

ASCENDING. (34) DESCENDING.



**With E and G omitted and with D Flat.**

ASCENDING. (35) DESCENDING.



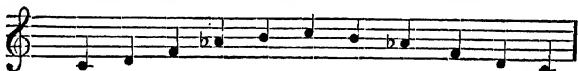
**With E and G omitted and with F Sharp.**

ASCENDING. (36) DESCENDING.



**With E and G omitted and with A Flat.**

ASCENDING. (37) DESCENDING.



**With D and G omitted and with B Flat.**

ASCENDING. (38) DESCENDING.



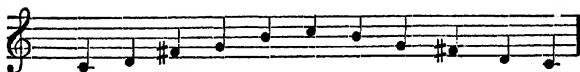
**With E and A omitted and with D Flat.**

ASCENDING. (39) DESCENDING.



**With E and A omitted and with F Sharp.**

ASCENDING. (40) DESCENDING.





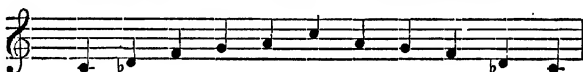
**With E and A omitted and with B Flat.**

ASCENDING. (41) DESCENDING.



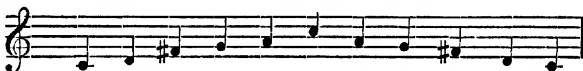
**With E and B omitted and with D Flat.**

ASCENDING. (42) DESCENDING.



**With E and B omitted and with F Sharp.**

ASCENDING. (43) DESCENDING.



**With E and B omitted and with A Flat.**

ASCENDING. (44) DESCENDING.



**With F and G omitted and with D Flat.**

ASCENDING. (45) DESCENDING.



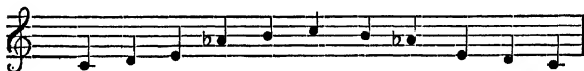
**With F and G omitted and with E Flat.**

ASCENDING. (46) DESCENDING.



**With F and G omitted and with A Flat.**

ASCENDING. (47) DESCENDING.



**With F and G omitted and with B Flat.**

ASCENDING. (48) DESCENDING.



**With F and A omitted and with D Flat.**

ASCENDING. (49) DESCENDING.



**With F and A omitted and with E Flat.**

ASCENDING. (50) DESCENDING.



ASCENDING. (51) DESCENDING.



ASCENDING. (52) DESCENDING.



ASCENDING. (53) DESCENDING.



ASCENDING. (54) DESCENDING.

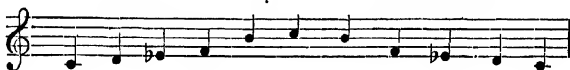


ASCENDING. (55) DESCENDING.



**With G and A omitted and with E Flat.**

ASCENDING. (56) DESCENDING.



**With G and A omitted and with F Sharp.**

ASCENDING. (57) DESCENDING.



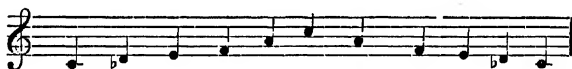
**With G and A omitted and with B Flat.**

ASCENDING. (58) DESCENDING.



**With G and B omitted and with D Flat.**

ASCENDING. (59) DESCENDING.



**With G and B omitted and with E Flat.**

ASCENDING. (60) DESCENDING.



**With G and B omitted and with F Sharp.**

ASCENDING.

(61)

DESCENDING.

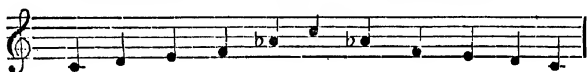


**With G and B omitted and with A Flat.**

ASCENDING.

(62)

DESCENDING.



**With A and B omitted and with D Flat.**

ASCENDING.

(63)

DESCENDING.



**With A and B omitted and with E Flat.**

ASCENDING.

(64)

DESCENDING.



**With A and B omitted and with F Sharp.**

ASCENDING.

(65)

DESCENDING.



**With D and E omitted and with F Sharp and A Flat.**

ASCENDING.

(66)

DESCENDING.



**With D and E omitted and with F Sharp and B Flat.**

**ASCENDING.**

(67)

DESCENDING.



**With D and E omitted and with A and B Flat.**

**ASCENDING.**

(68)

**DESCENDING.**



**With D and F omitted and with E and A Flat.**

**ASCENDING.**

(69)

DESCENDING.

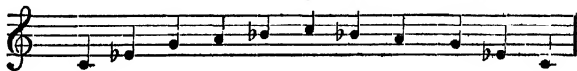


**With D and F omitted and with E and B Flat.**

**ASCENDING.**

(70)

**DESCENDING.**



**With D and F omitted and with A and B Flat.**

ASCENDING.

(71)

DESCENDING.

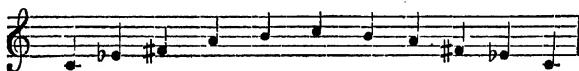


**With D and G omitted and with E Flat and F Sharp.**

ASCENDING.

(72)

DESCENDING.

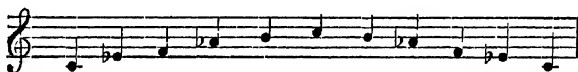


**With D and G omitted and with E and A Flat.**

ASCENDING.

(73)

DESCENDING.

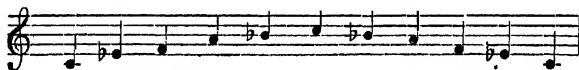


**With D and G omitted and with E and B Flat.**

ASCENDING.

(74)

DESCENDING.

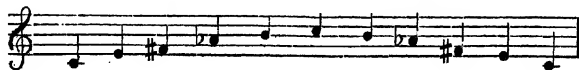


**With D and G omitted and with F Sharp and A Flat.**

ASCENDING.

(75)

DESCENDING.



With D and G omitted and with F Sharp and B Flat.

ASCENDING.

(76)

DESCENDING.

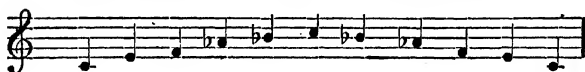


With D and G omitted and with A and B Flat.

ASCENDING.

(77)

DESCENDING.

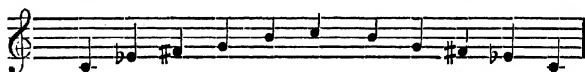


With D and A omitted and with E Flat and F Sharp.

ASCENDING.

(78)

DESCENDING.

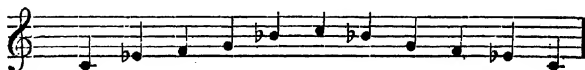


With D and A omitted and with E and B Flat.

ASCENDING.

(79)

DESCENDING.

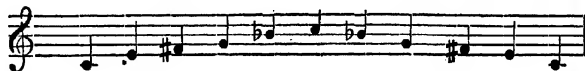


With D and A omitted and with F Sharp and B Flat.

ASCENDING.

(80)

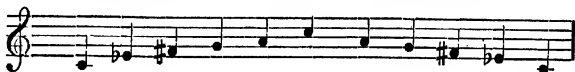
DESCENDING.





**With D and B omitted and with E Flat and F Sharp.**

ASCENDING. (81) DESCENDING.



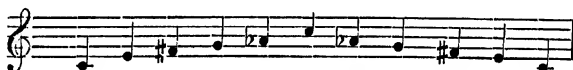
**With D and B omitted and with E and A Flat.**

ASCENDING. (82) DESCENDING.



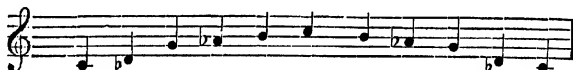
**With D and B omitted and with F Sharp and A Flat.**

ASCENDING. (83) DESCENDING.



**With E and F omitted and with D and A Flat.**

ASCENDING. (84)\* DESCENDING.



**With E and F omitted and with D and B Flat.**

ASCENDING. (85) DESCENDING.



**With E and F omitted and with A and B Flat.**

ASCENDING. (86) DESCENDING.



**With E and G omitted and with D Flat and F Sharp.**

ASCENDING. (87) DESCENDING.



**With E and G omitted and with D and A Flat.**

ASCENDING. (88) DESCENDING.



**With E and G omitted and with D and B Flat.**

ASCENDING. (89) DESCENDING.



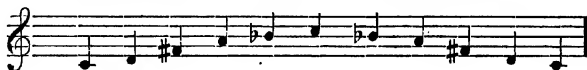
**With E and G omitted and with F Sharp and A Flat.**

ASCENDING. (90) DESCENDING.



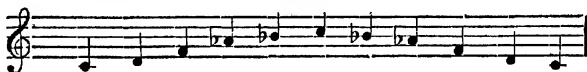
**With E and G omitted and with F Sharp and B Flat.**

ASCENDING. (91) DESCENDING.



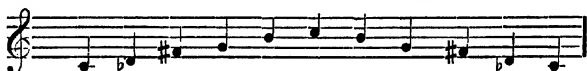
**With E and G omitted and with A and B Flat.**

ASCENDING. (92) DESCENDING.



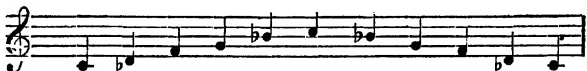
**With E and A omitted and with D Flat and F Sharp.**

ASCENDING. (93) DESCENDING.



**With E and A omitted and with D and B Flat.**

ASCENDING. (94) DESCENDING.



**With E and A omitted and with F Sharp and B Flat.**

ASCENDING. (95) DESCENDING.



**With E and B omitted and with D Flat and F Sharp.**

ASCENDING.

(96)

DESCENDING.



**With E and B omitted and with D and A Flat.**

ASCENDING.

(97)

DESCENDING.

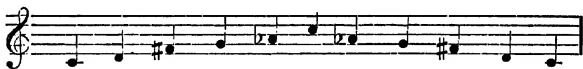


**With E and B omitted and with F Sharp and A Flat.**

ASCENDING.

(98)

DESCENDING.



**With F and G omitted and with D and E Flat.**

ASCENDING.

(99)

DESCENDING.



**With F and G omitted and with D and A Flat.**

ASCENDING.

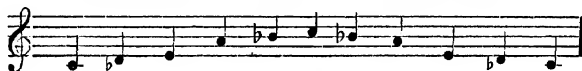
(100)

DESCENDING.



**With F and G omitted and with D and B Flat.**

ASCENDING. (101) DESCENDING.



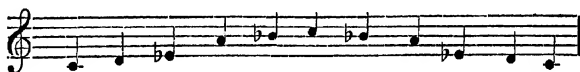
**With F and G omitted and with E and A Flat.**

ASCENDING. (102) DESCENDING.



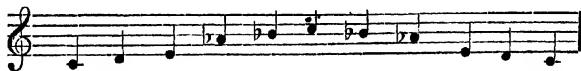
**With F and G omitted and with E and B Flat.**

ASCENDING. (103) DESCENDING.



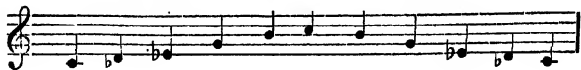
**With F and G omitted and with A and B Flat.**

ASCENDING. (104) DESCENDING.



**With F and A omitted and with D and E Flat.**

ASCENDING. (105) DESCENDING.



**With F and A omitted and with D and B Flat.**

ASCENDING. (106) DESCENDING.



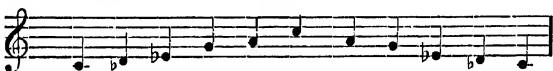
**With F and A omitted and with E and B Flat.**

ASCENDING. (107) DESCENDING.



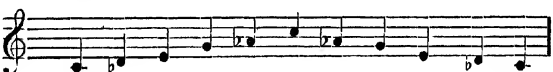
**With F and B omitted and with D and E Flat.**

ASCENDING. (108) DESCENDING.



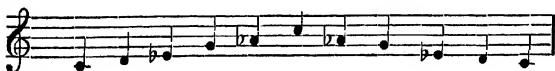
**With F and B omitted and with D and A Flat.**

ASCENDING. (109) DESCENDING.



**With F and B omitted and with E and A Flat.**

ASCENDING. (110) DESCENDING.



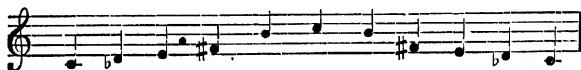
**With G and A omitted and with D and E Flat.**

ASCENDING. (111) DESCENDING.



**With G and A omitted and with D Flat and F Sharp.**

ASCENDING. (112) DESCENDING.



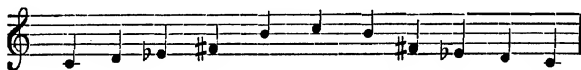
**With G and A omitted and with D and B Flat.**

ASCENDING. (113) DESCENDING.



**With G and A omitted and with E Flat and F Sharp.**

ASCENDING. (114) DESCENDING.



**With G and A omitted and with E and B Flat.**

ASCENDING. (115) DESCENDING.



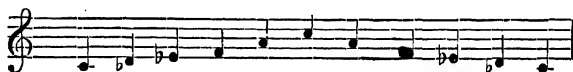
**With G and A omitted and with F Sharp and B Flat.**

ASCENDING. (116) DESCENDING.



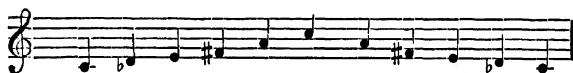
**With G and B omitted and with D and E Flat.**

ASCENDING. (117) DESCENDING.



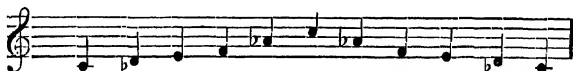
**With G and B omitted and with D Flat and F Sharp.**

ASCENDING. (118) DESCENDING.



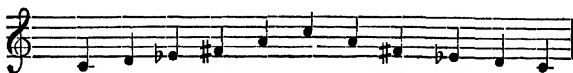
**With G and B omitted and with D and A Flat.**

ASCENDING. (119) DESCENDING.



**With G and B omitted and with E Flat and F Sharp.**

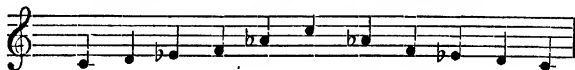
ASCENDING. (120) DESCENDING.





**With G and B omitted and with E and A Flat.**

ASCENDING. (121) DESCENDING.



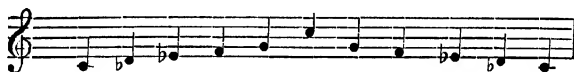
**With G and B omitted and with F Sharp and A Flat.**

ASCENDING. (122) DESCENDING.



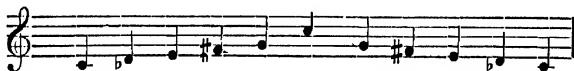
**With A and B omitted and with D and E Flat.**

ASCENDING. (123) DESCENDING.



**With A and B omitted and with D Flat and F Sharp.**

ASCENDING. (124) DESCENDING.



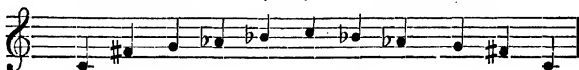
**With A and B omitted and with E Flat and F Sharp.**

ASCENDING. (125) DESCENDING.



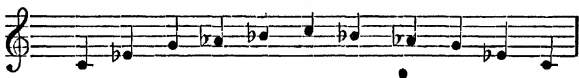
**With D and E omitted and with F Sharp, A and B Flat.**

ASCENDING. (126) DESCENDING.



**With D and F omitted and with E, A and B Flat.**

ASCENDING. (127) DESCENDING.



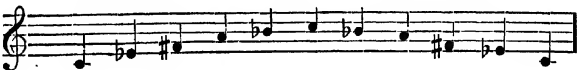
**With D and G omitted and with E Flat, F Sharp and A Flat.**

ASCENDING. (128) DESCENDING.



**With D and G omitted and with E Flat, F Sharp and B Flat.**

ASCENDING. (129) DESCENDING.



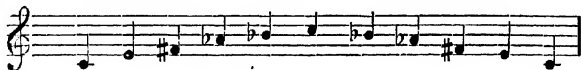
**With D and G omitted and with E, A and B Flat.**

ASCENDING. (130) DESCENDING.



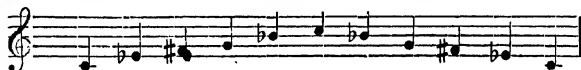
**With D and G omitted and with F Sharp, A and B Flat.**

ASCENDING. (131) DESCENDING.



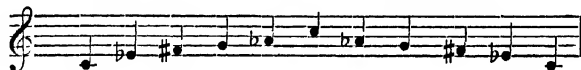
**With D and A omitted and with E Flat, F Sharp and B Flat.**

ASCENDING. (132) DESCENDING.



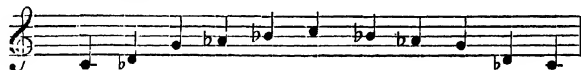
**With D and B omitted and with E Flat, F Sharp and A Flat.**

ASCENDING. (133) DESCENDING.



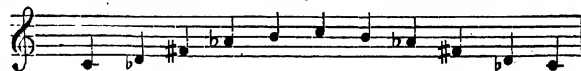
**With E and F omitted and with D, A and B Flat.**

ASCENDING. (134) DESCENDING.



**With E and G omitted and with D Flat, F Sharp and A Flat.**

ASCENDING. (135) DESCENDING.



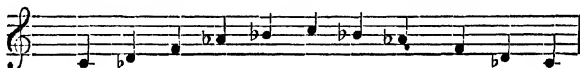
**With E and G omitted and with D Flat, F Sharp and B Flat.**

ASCENDING. (136) DESCENDING.



**With E and G omitted and with D, A and B Flat.**

ASCENDING. (137) DESCENDING.



**With E and G omitted and with F Sharp, A and B Flat.**

ASCENDING. (138) DESCENDING.



**With E and A omitted and with D Flat, F Sharp and B Flat.**

ASCENDING. (139) DESCENDING.



**With E and B omitted and with D Flat, F Sharp and A Flat.**

ASCENDING. (140) DESCENDING.



ASCENDING. (141) DESCENDING.



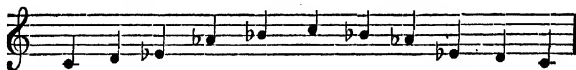
ASCENDING. (142) DESCENDING.



ASCENDING. (143) DESCENDING.



ASCENDING. (144) DESCENDING.



ASCENDING. (145) DESCENDING.



**With F and B omitted and with D, E and A Flat.**

ASCENDING. (146) DESCENDING.



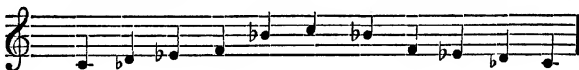
**With G and A omitted and with D, E Flat and F Sharp.**

ASCENDING. (147) DESCENDING.



**With G and A omitted and with D, E and B Flat.**

ASCENDING. (148) DESCENDING.



**With G and A omitted and with D Flat, F Sharp and B Flat.**

ASCENDING. (149) DESCENDING.



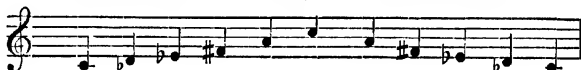
**With G and A omitted and with E Flat, F Sharp and B Flat.**

ASCENDING. (150) DESCENDING.



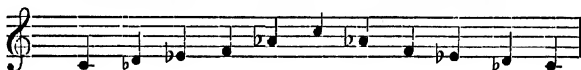
**With G and B omitted and with D, E Flat and F Sharp.**

ASCENDING. (151) DESCENDING.



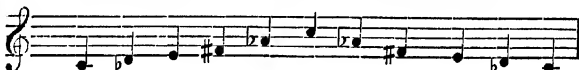
**With G and B omitted and with D, E and A Flat.**

ASCENDING. (152) DESCENDING.



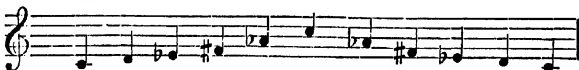
**With G and B omitted and with D Flat, F Sharp and A Flat.**

ASCENDING. (153) DESCENDING.



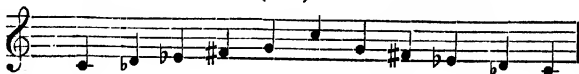
**With G and B omitted and with E Flat, F Sharp and A Flat.**

ASCENDING. (154) DESCENDING.



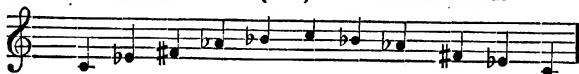
**With A and B omitted and with D, E Flat and F Sharp.**

ASCENDING. (155) DESCENDING.



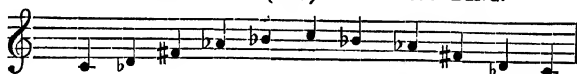
**With D and G omitted and with E Flat, F Sharp,  
A and B Flat.**

ASCENDING. (156) DESCENDING.



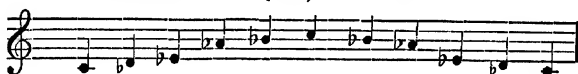
**With E and G omitted and with D Flat, F Sharp,  
A and B Flat.**

ASCENDING. (157) DESCENDING.



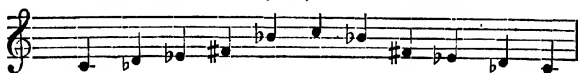
**With F and G omitted and with D, E, A and B Flat.**

ASCENDING. (158) DESCENDING.



**With G and A omitted and with D, E Flat, F Sharp  
and B Flat.**

ASCENDING. (159) DESCENDING.



**With G and B omitted and with D, E Flat, F Sharp  
and A Flat.**

ASCENDING. (160) DESCENDING.





# Illustrations.

## SUMPURNA THÁT.

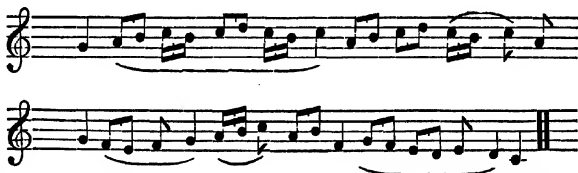
(1)\*

### RÁGINÍ DEOGIRÍ.

#### FIRST STRAIN.



#### SECOND STRAIN.



\* The numerals given here refer to those of the scales shown under the heading "*Sumpurna Thát*" in the preceding pages.

(2)

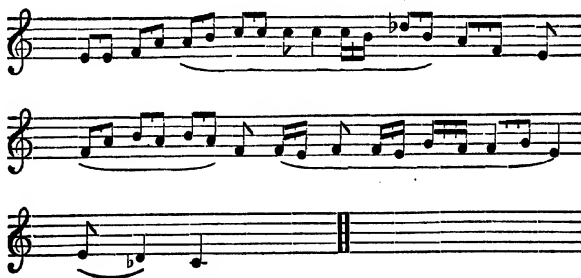
## RÁGA PANCHAMÁ.

*With D Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(3)

## RÁGINÍ DEOSÁGA.

*With E Flat.*

FIRST STRAIN.



SECOND STRAIN.



(4)

## RÁGINÍ KALYÁNA.

*With F Sharp.*

FIRST STRAIN.



SECOND STRAIN.



(5)

## RĀGINĪ PANCHAMA-BĀHĀRA.

*With A Flat.*

FIRST STRAIN.



SECOND STRAIN.



(6)

## RÁGINÍ JHIJHITÍ.

*With B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(7)

## RĀGINÍ SOHĀ-BHAIRAVÍ.

*With D and E Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(8)

## RĀGINÍ MĀLIGAUṚĀ.

*With D Flat and F Sharp.*

## FIRST STRAIN.



## SECOND STRAIN.





(9)

## RĀGINÍ KALĪNGARĀ.

*With D and A Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(10)

## RÁGINÍ ÁMRA-PANCHAMA.

*With D and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 11 )

## RĀGINÍ VALLARÍ.

*With E Flat and F Sharp.*

## FIRST STRAIN.



## SECOND STRAIN.



( 12 )

## RĀGINÍ PILU.

*With E and A Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(13)

## RÁGINÍ SINDHU.

*With E and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(14)

## RĀGINĪ KAUMĀRIKĀ.

*With F Sharp and A Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 20 )

## RĀGINĪ DHĀNĀŚRĪ.

*With D Flat, F Sharp and A Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 22 )

## RĀGINĪ YOGINĀ.

*With D, A and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.





(25)

## RÁGINÍ BĀGÍSVARÍ.

*With E, A and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 27 )

RĀGINĪ' GUJJARĪ.

*With D, E Flat, F Sharp and A Flat.*

### FIRST STRAIN.



## SECOND STRAIN.



(29)

## RĀGINĪ BHAIKAVĪ.

*With D, E, A and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 32 )

## RĀGINÍ TORÍ.

*With D and E Flat, F Sharp, A and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(3)

## SHÁRAVA THÁT.

RÁGINÍ BIBHÁSA.

*With F omitted.*

FIRST STRAIN.



SECOND STRAIN.



(14)

## RÁGINÍ SUR-MALLÁRA.

*With E omitted and with B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(19)

## RÁGINÍ SOHINÍ.

*With G omitted and with D Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



( 37 )

## RÁGINÍ PURIYÁ.

*With G omitted and with D Flat and F Sharp.*

### FIRST STRAIN.



## SECOND STRAIN.





(59)

## RĀGINĪ NĀGADHVANI-KĀNARĀ.

*With A omitted and with E and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(8)

## ORAVA THÁT.

RÁGINÍ VRINDÁVAÑÍ-SÁRAṄGA.

*With E and A omitted.*

FIRST STRAIN.



SECOND STRAIN.



(23)

## RÁGINÍ HINDOLA.

*With D and G omitted and with F Sharp.*

## FIRST STRAIN.



## SECOND STRAIN.



( 27 )

## RÁGINÍ MÁLAŚRÍ.

*With D and A omitted and with F Sharp.*

## FIRST STRAIN.



## SECOND STRAIN.



( 88 )

## RĀGINĪ DHABALĀŚRĪ.

*With E and G omitted and with D and A Flat.*

## FIRST STRAIN.



## SECOND STRAIN.



(130)

RÁGINÍ MÁLKOŚA.*With D and G omitted and with E, A and B Flat.*

## FIRST STRAIN.



## SECOND STRAIN.





IN the preceding pages have been given the Scales which are mostly in use in Hindu Music, and a few specimens of the *Rāgas* which are composed on the basis of such Scales. In order to ascertain whether and to what extent *Harmony* is applicable to *Rāgas*, it would be necessary to enquire into the principles underlying them, and with this view a brief account of the Hindu System of Music is given below.

According to both ancient and modern authorities, the number of the principal musical Notes is seven, and these seven Notes go respectively by the names of *Sharja*, *Rishabha*, *Gándhāra*, *Madhyama*, *Panchama*, *Dhaivata* and *Nishāda*, or as they are popularly known by their symbolic names, *sa*, *ri*, *ga*, *ma*, *pa*, *dha* and *ni*, corresponding very closely to C, D, E, F, G, A, and B of the European System of music. These seven Notes constitute a *Saptaka*. European Musicians add to these the first note of the next *Saptaka* and designate the series as an octave. They are found to use seven, eight, or more octaves on the Piano and some other instruments. But the classical authorities on Hindu Music used only three *Saptakas* in their vocal or instrumental music, these being styled, *Mandra* (or *Udārā*), *Madhya* (or *Mudārā*), and *Tāra*, (or *Tārā*). Modern musicians, however, sometimes make use of four *Saptakas*.

The *S'rutis* are subdivisions of sound intervening the notes. They are twenty-two in number and are thus arranged :—Four in *Sharja*, three in *Rishabha*, two in *Gándhāra*, four in *Madhyama*, four in *Panchama*, three in *Dhaivata*, and two in *Nishāda*. In the arrangement of the *S'rutis*, modern usage is diametrically opposite to the classical one; the latter placing them before the Notes to which they respectively belong, while the former fix their position after the Notes. Supposing a



cypher to represent a *S'ruti*, the classical arrangement would be like thus :—

o o o o o o o o o o o o o o o o  
           sa       ri       ga       ma       pa       dha       ni.

The modern arrangement\* is as follows :—

o o o o o o o o o o o o o o o o  
   sa       ri       ga       ma       pa       dha       ni.

It is difficult to determine when or by whom the alteration in the arrangement was effected. The arrangement of the frets on the *Viná* and other stringed instruments accords with the modern acceptation of the principle.\* It will be seen from a look at these instruments, that, in them *Gándhára* and *Nisháda*, each of which has two *S'rutis*, and is called in European music a semi-tone, have, between themselves and the succeeding notes, half the space that is allotted to those having four *S'rutis*; and following the same method, *Rishabha* and *Dhaivata*, have, with reference to the next succeeding Notes, each a fourth less than that of *Sharja*, *Madhyama*, and *Panchama* (each of which has four *S'rutis*). According to a rule laid down in the classical treatises, the disposition of the notes is reversed in the case of *Dáraví* (literally, wooden, i. e., stringed) instruments, and out of this reversed arrangement, perhaps, the modern theory about the arrangement of the position of the *S'rutis* has been evolved.

According to the theory of the ancients, *Sharja*, *Gándhára* and *Madhyama* each constituted a *Gráma*.† In support of this, it is asserted that *Sharja*‡ is the principal *Gráma*, inasmuch as it is the principal note from which proceeds the recog-

\* Capt. Willard, Sir W. Jones, and other eminent writers, who had carefully studied the principles of Indian Music and were practically acquainted with it, adopted the modern disposition of the *S'rutis*.

† *Gráma*, in Indian Music, means a series of notes arranged according to certain rules.

‡ Etymologically speaking, *Sharja* is that from which *shat* (i. e., the six notes) arise.

nition of the six other notes. The *Madhyama* is declared a *Grāma*, because the use of this note is never avoided in the *Shāraṇa*\* and *Orava*\* Scales. *Gāndhāra* is deemed eligible to be taken as a *Grāma*, because it springs from the celestial beings and is consequently a great favorite of theirs. The use of the *Gāndhāra Grāma* is confined only to the celestial regions. Some writers, again, recognise *Panchama* as a *Grāma* in lieu of *Gāndhāra*. Musicians of the modern day, as well as the author of the classical treatise "*Saṅgīta Sudhākara*", however, recognise the *Sharja* of each of the three *Saptakas* as a *Grāma*. In justification of the view taken by them, they argue that it is useless to hold the *Gāndhāra* to be a *Grāma*, since its application is utterly unknown in the terrestrial regions. As regards the *Madhyama*, they remark that the reasons for which the ancients styled it a *Grāma* do not hold good in the present day, for there are in modern use several *Rāgas* of the *Shāraṇa* and *Orava* Scales, in which the *Madhyama* is strictly excluded, such, for instance, as the *Bhūpālī*, *Bibhāsa*, &c. According to classical works, the conditions of the three *Grāmas* are as follows :—

In the case of the *Sharja Grāma*, the fifth Note (*Panchama*) should remain on its fourth *S'ruti*, and the sixth Note (*Dhaivata*), on its third, provided there are no alterations made in the arrangement of the *S'rutis* with regard to either of the notes.

In the case of the *Madhyama Grāma*, the *Panchama* should be on its third *S'ruti* instead of the fourth, and the *Dhaivata*, though including into itself the fourth *S'ruti* of the preceding *Panchama*, should remain on its own third,—the value of these two Notes being, of course, affected by the altered arrangement of the *S'rutis*.

In the case of the *Gāndhāra Grāma*, the *Gāndhāra* should take into itself the last *S'ruti* of the *Rishabha* and the first of the

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\* For explanation of these terms *Vide postea*.

*Madhyama*, and thus become a note consisting of four *S'rutis*; the *Dhaivata* should leave off its last *S'ruti* and take the last *S'ruti* of the *Panchama*, thus continuing to be a note of three *S'rutis*, (but not according to the natural arrangement of the *Saptaka*); and the *Nishāda* should take possession of the last *S'ruti* left by the *Dhaivata*, and the first *S'ruti* of *Sharja* of the succeeding *Saptaka*, and thus become a note of four *S'rutis*.

The following tables respectively explain the position of the *S'rutis* in the three *Grāmas* as recognised by the ancient authorities.

#### SHARJA GRĀMA.

o o o o o o o o o o o o o o o o o o  
           sa      ri      ga         ma      pa      dha     ni

#### MADHYAMA GRĀMA.

o o o o o o o o o o o o o o o o o o  
           sa      ri      ga         ma      pa      dha     ni.

#### GĀNDHĀRA GRĀMA.

o o o o o o o o o o o o o o o o o o  
 ni      sa      ri         ga      ma      pa      dha.

The ancients have divided the seven Notes into *Prakrita* or *Suddha* and *Vikrita*. A Note is considered *Prakrita* when it remains in its own position in the order of the gamut, provided with the full complement of *S'rutis* assigned to it. But when, by leaving off any of its own *S'rutis* or by taking any *S'ruti* which belongs to the note preceding or succeeding it, it becomes a note possessed of a less or greater number of *S'rutis* than that originally fixed for it, or by giving and at the same time taking a *S'ruti*, of the same number as it should possess, it is then called a *Vikrita* note. The *Vikrita* note again is subdivided into two:—viz, *Chyuta Vikrita* and *Achyuta Vikrita*. By the former term is meant a note which has been removed from its fixed hold on a *S'ruti*; by the latter, one which, though retaining its own seat, becomes, by the process of giving away

any *S'ruti* to another or of taking one from it, possessed of a less or greater number of *S'rutis* than that originally fixed for it, or by giving and taking one at the same time of the same number as is assigned to it.

The number of *Prakrita* notes is seven, and that of *Vikrita* Notes, twelve. They are respectively shown as under :—

#### PRAKRITA.

o o o o o o o o o o o o o o o o o o  
sa ri ga ma pa dha ni.

#### VIKRITA.

o o o o o o o o o o o o o o o o o o  
ni ni sa sa ri ga ga ma ma \*pa dha.

Modern musicians, however, make up the number of *Vikrita* notes in a different way. They do so by making the notes *Rishabha*, *Gándhāra*, *Madhyama*, *Dhaivata* and *Nishāda*,—Flat or very Flat, and Sharp or very Sharp.

According to them, the classification is as follows :—

#### PRAKRITA.

o o o o o o o o o o o o o o o o o o  
sa ri ga ma pa dha ni.

#### VIKRITA.

o o o o o o o o o o o o o o o o o o  
ri ri ga ga ga ma ma dha dha ni ni ni.

We have briefly enumerated some of the principal features of the Notes. We shall now proceed to show their application to *Rāgas*.

A *Rāga* is the succession of notes so arranged, according to prescribed rules, as to awaken a certain feeling of the mind. The notes essential to the composition of a *Rāga* are of

\* The above shows 11 *Vikrita* notes only. But *pa* becomes *Vikrita* twice; once when *pa* is one *S'ruti* less in the *Madhyama Grāma*, and another time, when in the case of *Madhyama Śādhāraṇa*, *Gāndhāra* takes the first *S'ruti* of *Madhyama*, and *pañchama*, while standing on its 3rd *S'ruti*, takes the last *S'ruti* of the *Madhyama*. It should be distinctly remembered that the 12 *Vikritas* as shown above are made up by the *Shurja* and the *Madhyama Grāmas* being put together.

four kinds, viz., *Vádí*, *Samvádí*, *Anuvádí*, and *Vivádí*. In the opinion of both ancient and modern authorities, that note is called the *Vádí*, which, by the frequency of its application in a certain *Rága*, and by the length of its duration, shows to the best advantage the character and the living form, as it were, of that *Rága*. Hence the *Vádí* is called the *Rájá* (king), that is, the principal note, and by Hindusthani musicians, the *ján*, or the life and soul, of the *Rága*. Any note lying with an interval of eight or twelve *Srutis* either in the ascending or descending Scale from the *Vádí* is called the *Samvádí*, or minister to the *Vádí*. The application of such a note is, of course, less frequent than that of the *Vádí*, but more than that of the other Notes. When, for instance, *Sharja* is the *Vádí* of a certain *Rága*, *Madhyama* and *Panchama* would be its *Samvádís*, as there is an interval of eight *Srutis* between *Sharja* and *Madhyama*, and of twelve, between *Sharja* and *Panchama*. In the event of *Rishabha* being the *Vádí*, the *Samvádís* would be *Panchama* and *Dhaivata*; in the case of *Gándhára*, the *Nisháda* only, there being no *Prakrita* note, with an interval of eight *Srutis* between it and the *Vádí*; in the case of *Madhyama*, the *Sharja* only (there being no other *Prakrita* note meeting the conditions); in that of *Panchama*, the *Sharja* and the *Rishabha*; in that of *Dhaivata*, the *Rishabha*, and, in that of *Nisháda*, the *Gándhará*.\* The rules given above for

\* The above is the result of calculations made according to the modern disposition of *Srutis*. According to the ancient method, the *Samvádís* would be as follows :—

<i>Vádí</i>				<i>Samvádís</i>
<i>Sharja</i>	...	...	...	<i>Madhyama and Panchama.</i>
<i>Rishabha</i>	...	...	...	<i>Dhaivata.</i>
<i>Gándhára</i>	...	...	...	<i>Nisháda.</i>
<i>Madhyama</i>	...	...	...	<i>Nisháda and Sharja.</i>
<i>Panchama</i>	...	...	...	<i>Sharja.</i>
<i>Dhaivata</i>	...	...	...	<i>Rishabha.</i>
<i>Nisháda</i>	...	...	...	<i>Gándhára and Madhyama.</i>

It may be noted here that, according to the authorities, *Nisháda* cannot be *Samvádí* to any other note than *Gándhára* and vice versa. *Madhyama*, therefore, can have only one *Samvádí*, which will be *Sharja*, though according to the calculations, it is shown to have *Nishádís* too for its *Samvádí*. *Nisháda* will have *Gándhára* only for its *Samvádí*.

the determination of the relation between the *Vádí* and the *Samvádí* in the case of *Prakṛita* notes hold good with reference to *Vikṛita* notes too. Some authors are of opinion that, except in the case of *Madhyama* and *Panchama* (these being immediately contiguous to each other), all notes having an equal number of *S'rutis* are *Vádís* and *Samvádís* to one another. An exception, however, is made in the case of *Rishabha* and *Panchama*, as these notes, though differing from each other in the number of *S'rutis*, do, as a matter of fact, stand to each other in the relation of *Vádí* and *Samvádí*, when, upon the former (*Rishabha*) being made the key-note, the latter (*Panchama*) takes up the position of *Madhyama*. The theory therefore resolves itself into this, that a Note will find its *Samvádí* in its fourth or fifth or both, provided such Notes are admissible according to the character of the *Rāga*.

That note, the application of which in a certain *Rāga* destroys its character, is termed *Vivádí*, or the enemy.

All notes other than those which have been characterised as above are called *Anuvádís* or subordinates.

The relation of the notes to each other is strikingly illustrated by the Sanskrit authorities in the symbolic classification made of them according to caste and color. *Sharja*, *Madhyama*, and *Panchama*, each of which has four *S'rutis* attached to it, come under the *Bráhmaṇa*, or the highest caste; *Rishabha* and *Dhaivata* (each having three *S'rutis*), under the *Kshatriya*, or the next class; *Gándhāra* and *Nishāda* (each having two *S'rutis*), under the *Vaiśya*, or the third class; and the *Vikṛita* notes, (i.e. such notes as have fallen from their former position), under the *S'údra*, or the lowest class. The names and nature of the colors attributed to the Notes are very nearly the same as given by Mr. George Field in his work styled "Chromatics: or the Analogy, Harmony and Philosophy of Colors." They are given in juxtaposition as follows:—

<i>Names of the Notes.</i>	<i>Color according to Sanskrit Authorities.</i>	<i>Color according to Mr. Field.</i>
<i>Sharja.</i>	Black.	Blue.
<i>Rishabha.</i>	Purple.	Purple.
<i>Gándhára.</i>	Golden.	Red.
<i>Madhyama.</i>	White.	Orange.
<i>Panchama.</i>	Yellow.	Yellow.
<i>Dhaivata.</i>	Grey.	Grey.
<i>Nisháda.</i>	Green.	Green.

By means of colored diagrams, Mr. Field has illustrated the analogy of the Definitive Scale of Colors and the gamut of the musicians. Any one acquainted with both music and painting will not, remarks Mr. Field, "find it difficult to carry these relations into figures and the forms of science universally. And as the acuteness, tone, and gravity of musical Notes, blend or run into each other through an infinite series in the musical Scale, imparting *Melody* to musical composition, so do the like infinite sequences of the tints, hues, and shades of colors, impart mellowness, or melody to colors and coloring. Upon these gradations and successions depend the sweetest effects of colors in nature and painting, so analogous to the melody of musical sounds, that we have not hesitated to call them the *Melody of Colors*." Mr. Field has gone into details on both the melody and harmony of colors and in music, but those details are omitted here as being too lengthy for, though not foreign to, the scope of the present treatise. It would be sufficient for the purposes of this book to observe that the Sanskrit authorities on music recognized the analogy, and were perhaps, to some extent, guided by it in the determination of the concords and discords of Notes.

We now come to the examination of the essential conditions according to which the *Rágas* are composed and performed. Each *Rága* is divided into four parts or strains; the 1st being called the *Siháyá*, the 2nd—the *Antará*, the 3rd—the *Sanchárá*,

and the 4th—the *Aḥhoga*. The *Rāgas* are divided into three kinds; viz., (1) *Sampurna*, or those in which all the seven notes of the gamut are used; (2) *Shārava*, or those in which only six notes are used; and (3) *Orava*, or those in which only five are used. Each of these three classifications is subdivided into three. These are (1) *Suddha* (i.e., pure), or those which show the character of only one *Rāga*; (2) *Chhāyālagā* or *Sālankā*, or those the composition of which partakes of the nature of two *Rāgas* artistically blended into each other; and (3) *Sankṛpā* (i.e., mixed), or those which are a mixture of three or more *Rāgas*.

The Six Original *Rāgas*\* are the only instances of the *Suddha* class. These are known by the names of *S'rī*, *Vasanta*, *Bhairava*, *Panchama*, *Megha* and *Nata-nārāyaṇa*. Three of these *Rāgas* are noted below :—

## S'RĪ.

## FIRST STRAIN.



\* The Six Principal *Rāgas* are called the *Rāgas* proper. The mixtures are called either *Rāgas* or *Roginās*.



## SECOND STRAIN.



## MEGHA.

## FIRST STRAIN.



## SECOND STRAIN.



## NATA-NÁRÁYANA.

## FIRST STRAIN.



## SECOND STRAIN.



The mixture of two of the Six Original *Rāgas* with each other gives birth to the *Sālanka Rāgas*. The mixture of *Megha* (otherwise called *Mallāra*) with *Nata-nārāyaṇa* has produced the *Rāga* named *Nata-Mallāra*, of which the following is the form:—

## NATA-MALLĀRA.

## FIRST STRAIN.



## SECOND STRAIN.



A mixed *Rāga* has a character of its own exclusive of that derived from the combination of two distinct *Rāgas*. In the *Sālanka Rāga* noted above, the passages marked 1, 3, 5, 6, 8, 10, partake of the nature of *Megha*, and the other passages represent *Nata-nārāyana*.

The admixture of three or more of the Original *Rāgas*, or of any two or more of the *Sālanka*, or a combination of both, called into existence the *Sankīrṇa Rāgas*. The blending of *S'rī*, *Megha*, and *Nata-nārāyana*, for instance, produced the *Rāga* named *Kāmōda* of which the notation is given as follows :—

## KÁMODA.

## FIRST STRAIN.



## SECOND STRAIN.





In the above *Rāga* the passages marked 1, 3, 5, 7, 9 and 11 represent *Megha*, those marked 2, 6 and 8 are derived from *Nata-nārāyaṇa*, and those marked 4 and 10 partake of the character of *S'rī*.

Most of the *Rāgas* are so constructed that, while in the ascending way certain notes are avoided and others slightly dwelt upon, those notes are respectively applied and used in a distinct manner in the descending process. It is not necessary that in the performance of a *Rāga* the Notes should be used in a graduated series. They are generally used in a mixed manner. Neither is the duration of the Notes nor their number uniform. Their variety adds not only to the grace and beauty of a *Rāga*, but is essential to its individuality and character. Then, again, a certain *Rāga* is made manifest with the *Murchchhanā*\* peculiar to it, without which its development is considerably affected.

The observance of the foregoing rules, which are some of the many attached to the execution of the *Rāgas*, enables one to perform a piece with precision and with regard to the integrity of its character. Any breach of those rules conduces to the marring of the effect of the *Rāgas* and to the mutilation of the form with which the authorities have clothed them. It is needless to mention that it is only at the hands of skilful musicians who have carefully studied the principles that justice is done to the character of the *Rāgas*.

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\* *Murchchhanā*, in the modern acceptance of the term, means the extension of a note to another in the ascending as well as the descending scale without any break in the arrangement of the intervening *S'rutis*.

It is almost generally complained by European musicians that Hindu Music is not perfect, because Harmony is not applied to it. Some of them despise the music of Hindusthan, simply on this account; others very kindly offer suggestions as to the feasibility of harmonising it. A careful consideration of the method in which vocal and instrumental music is performed in this country cannot but lead one to the conclusion that Hindu Music is *not* altogether devoid of Harmony, though this Harmony may not be the same as that by which European musicians understand the term. The use of the *S'resthālakāra* (a kind of musical grace) on the *Vindā*, *Setār* and some other stringed instruments, the singing in chorus by boys and adults in melo-dramatic performances, the tuning, in some instances, of the drum instruments *Mridanga* and *Tablá* &c. to the fourth or the fifth of the key-note adopted by the vocalist or instrumentalist whose performances these pulsatile instruments are intended to accompany—all these facts, and others, tend, in some way, to show that the principles of Harmony are not altogether unknown to the musicians of India. Besides, certain treatises\* on Indian Music have dwelt upon this theme and laid down certain rules for the safe application of Harmony. But the use of Harmony, as defined therein, would not, it is feared, come up to the standard aimed at by the musicians of Europe. The spirit of Indian Music is against the adoption of Harmony in the European import.† The *Rāga* is essentially melodic in its character—it is a succession of notes artistically

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\* Mention is made in the classical works of an innumerable variety of the permutation and combination of sounds having formed the subject of study with the Musician. It is further mentioned that the sage Nārada had learnt of Ulāka a large number of tonal combinations.

† Capt. Willard, who had a practical acquaintance with the subject, makes the following remarks in his "Treatise on the Music of Hindusthan":—

"Indeed so wide is the difference between the natures of European and Oriental Music, that I conceive a great many of the latter would baffle the attempts of the most expert contrapuntist to set a Harmony to them, by the existing rules of that science."

so arranged as to produce a certain effect, differing in the minutest particulars from that derivable from another *Rāga*.

The two *Sharava Rāgas*, *Bibhāsa*, and *Bhūpālī*, for instance, are very much like each other in character, but the permutation and the duration of the Notes applicable to them constitute a wide difference between the two as the subjoined illustrations will show :—

BIBHÁSA.

### FIRST STRAIN.



## SECOND STRAIN.





## BHÚPÁLÍ.

## FIRST STRAIN.



## SECOND STRAIN.



It will be seen from the above, how the two *Rágas* differ from each other in essential particulars. The tunes that may be composed out of these must necessarily partake of the difference. Two tunes composed of *Bibhása* and two of *Bhúpálí* are given as follows by way of example :

## BIBHÁSA.

(Tune 1.)

*Tála—Madhyamána.*

## FIRST STRAIN.



## SECOND STRAIN.



## BIBHÁSA.

(Tune 2.)

*Tála—Madhyamána.*

## FIRST STRAIN.



## SECOND STRAIN.



## BHÚPÁLÍ.

(Tune 1.)

*Tála—Madhyamāna.*

## FIRST STRAIN.



## SECOND STRAIN.



## BHÚPÁLÍ.

(Tune 2.)

*Tála—Madhyamāna.*

## FIRST STRAIN.



## SECOND STRAIN.



Two *Rāgas* which are played on the same *Thāt* (Mode) may be so constituted with reference to the permutation of the Notes, that one will widely differ from the other in character. The *Rāgas Lalita* and *Purabi*, for example, are played on the same *Thāt*, viz., D flat, F, and F sharp, and yet owing to the peculiarity in the arrangement of the Notes with regard to their ascension and descension, the former has been classed under the group performable in the morning, and the latter under that performable in the evening. The two *Rāgas* as noted down below will show the points of dissimilarity:—

## LALITA.

## FIRST STRAIN.



## SECOND STRAIN.



## PURABÍ.

## FIRST STRAIN.



## SECOND STRAIN.



The illustrations given before will, it is hoped, show the nature of the difference that exists between one *Rāga* and another, and it is by the drawing of these niceties that an endless variety of *Rāgas* has been composed out of the mixture of one with another. Now, these niceties it would be next to impossible to observe, if an attempt to improve upon the compositions be made, by the superaddition of any Note or Notes foreign to its nature, by means of Harmony which is a *combination* of Notes. The combined sound of the first and the fifth, for instance, would be a chord, and this combination (which is a stranger to Indian Music and, as a sound, not recognised by it), when tacked occasionally on to a melodic piece would certainly destroy its character as a *Rāga*, and would render the whole thing not only *un-Hindu* Music, but a perfect babel of foreign jargon.

The outlines of the principles of Indian Music given in the preceding pages show the intricacies of the system, and should efforts be made to introduce Harmony into Indian Music, without due care and attention, the effects on its integrity would be simply disastrous. For, to steer clear of all difficulties, one will have to see that the Notes inimical to the character of a *Rāga* are avoided, that such Notes which should not be used in the ascending or descending process are not so applied, that the rules observable with regard to the application of Notes in a mixed *Rāga* are not infringed, that a Note is not prolonged further than is necessary, that a Note or a series of Notes expressed by means of the *Murchchhaná* are not sounded individually and in a detached way,—and so forth. Hindu Music abounds in many *Rāgas*, such as *Kānarā* and *Gonra*, with complicated *Murchchhanás*, and others, like *Gaur* and *Múltání*, wherein the third or quarter tones are used, the nature of which would not admit of their being transcribed according to the current system of European notation or of

being correctly rendered on such European instruments as the Piano or Harmonium,\*—far less harmonization. A few *Rāgas* of a simple character might be set to Harmony.

It is necessary to observe that the application of chords on the Melody is out of the question. On the Piano and similar instruments, simple chords with the left hand might be judiciously attempted. *Sharja* (C) and *Panchama* (G) might be alternately made to accompany the melody, with the left hand, provided *Panchama* is admissible in the *Rāga*; otherwise *Madhyama*, when it is the principal note in the *Rāga*, may be used. But the alternate use of two or three notes would not do away with the monotony, which Harmony is clearly intended to obviate.†

It would seem, after all, that the difficulties in the way of harmonising Hindu Music are by no means few or small. Nothing but a compromise can solve the problem. Let the European musicians modify their rules of Harmony so that it may be applied to Indian Music with the least injury to its integrity, and let also the Hindu musicians relax the stringency of the rules with which their Music is bound hard and fast. Unless both parties are prepared to make concessions, it would be futile to engraft Harmony on Indian Music. The parties to

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\* In a supplement to this book will be found a comparative drawing of the *Sharja Grāma* and the European Diatonic Scale, as executed for me by a European friend. If I understand the subject aright, the difference in the intervals of the two Scales is a stumbling block to the correct rendering of the Indian notes on such instruments having fixed keys as the Piano and the Harmonium. The difficulty of playing Hindu *Rāgas* or tunes on such instruments may well be imagined, and how far the plan of harmonizing them may be affected thereby, I leave it to the thoughtful musician to determine.

† In the absence of a thorough knowledge of the principles of Harmony as recognised in European Music, I could not take upon myself to give an illustration of a Harmonised piece of Hindu Music. But I have no doubt that some expert contrapuntist will be able to furnish one on the lines indicated.



the compromise should be such persons only as are thoroughly conversant with the music of both Europe and India, for while they apply Harmony, they should be bound to see that they give the *least* offence,—for offence they *must* necessarily give,—to the ear of the people who have cherished with pleasure and pride a form of music which, it is traditionally believed, has come down to them from the heavens, or at any rate, from time immemorial, from their fore-fathers—the Aryans of learning and fame—the early pioneers of civilization in the land of the rising sun.

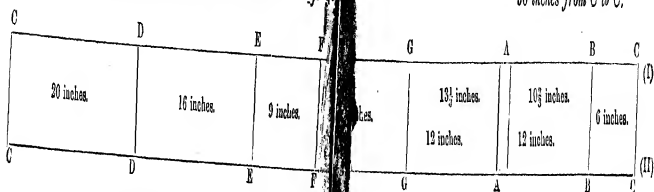
THE END.

[Supplement to "The Musical Scales of the Hindus."]

# THE SHARJA-GRAMA AND EUROPEAN DIATONIC SCALE.

(i) One octave of frets of the Primitive Sanskrit Sharja-

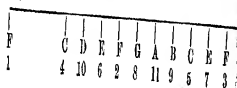
90 inches from C to C.



(ii) European Diatonic Scale.

To form the Primitive Sanskrit Sharja on the open wire of the Seta.

(iii)



Divide the whole string into two equal parts in F (2); and

Divide the right half into two halves at F (3).

Divide the whole string into three equal parts at C (4) and C (5).

Then F will be exactly in the middle between C and C.

Divide the C string (from 4 to 5) into 5 equal parts, take E (6) one-fifth from C (5); and

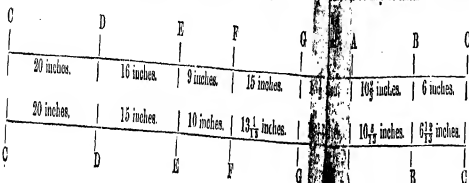
Divide the C string (from 4 to 5) into three equal parts, and take G (8) one-third from C (5).

Divide the G string (from 8 to 5) into 5 equal parts, and take B (9) one-fifth to the right of G (8).

Divide the space from C (4) to C (5) into three equal parts, and take D (10) one-third from C (4).

Divide the space from C (8) to 5 into nine equal parts, and take A (11) one-ninth from C (8).

The modern Bengali rule of dividing C-F into 9 and F to C into 13 parts is not as accurate as may be calculated from No. (i).



Accurate division of wire of Sharja-grama.

Modern division of the wire.



## ERRATA.

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<i>Page.</i>	<i>Staff.</i>	<i>Corrections.</i>				
103	5	All <i>F's</i> from the 12th Note should be <i>Naturals</i> .				
104	2	Ditto	ditto	14th	ditto	ditto.
106	2	Ditto	ditto	12th	ditto	ditto.
107	1	Ditto	ditto	1st	ditto	ditto.

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